

REMARKS

By Amendment, claims 1, 3, 6 and 13 are amended, claims 17-22 are cancelled, and claims 26-29 are newly presented. The specification and the drawings are also amended to correct clerical errors. No new matter is introduced. Claims 1-16 and 22-29 are active for examination.

The Office Action dated December 18, 2002 rejected claims 1-16 under 35 U.S.C. §102(a) as being anticipated by Salley et al. (U.S. Patent No. 5,254,952) and claims 23-25 under 35 U.S.C. §103(a) as being unpatentable over Salley in view of Bertness (U.S. Patent No. 6,331,762). The Examiner also objected to claim 1, the specification and the declaration for formality reasons. The rejections and objections are respectfully traversed in view of the amendment and remarks presented herein.

AMENDMENT TO THE DRAWINGS

By this response, Figs. 1, 2 and 4 are amended to correct numbering errors. A connection between load 117 and switch 121, which was in the original drawings but was omitted from the later submitted formal drawings, is added. Fig. 3 remains unchanged. No new matter is added.

THE OBJECTION TO THE DECLARATION IS ADDRESSED

The Office Action objected to the declaration for failing to include one of the inventors' post office address. By this amendment, an updated declaration including information requested by the Examiner is submitted concurrently herewith.

THE OBJECTIONS TO CLAIM 1 AND THE SPECIFICATION ARE ADDRESSED

Claim 1 and the specification were objected to for containing inconsistent element numbers. By this Amendment, claim 1 and the specification are amended to remove the errors.

In addition, a drawing correction is proposed for Figs. 1, 2 and 4 to renumber components shown in the drawings. Approval of the drawing correction is respectfully solicited. If approved, formal drawings incorporating the corrections will be filed following receipt of a Notice of Allowability.

THE OBVIOUSNESS REJECTIONS OF THE CLAIMS ARE TRAVERSED

Claims 1-16 were rejected as being unpatentable over Salley. Applicants respectfully disagree because the Office Action failed to establish a prima facie case of obviousness.

Claim 1, as amended, recites:

A method for evaluating the operation of an alternator driven by a motor, comprising the steps of:
detecting a motor speed or an alternator speed;
coupling a load to the alternator upon the motor speed or the alternator speed reaching a predetermined level; and
detecting characteristics of an alternator output signal...after the load has been coupled to the alternator for a first predetermined period of time.

Thus, a method according to claim 1 detects characteristics of the alternator output after the load has been coupled to the alternator for a predetermined period of time. Claims 4, 13 and 16 also include, among other things, comparable limitation.

Salley is related to a semi-automatic alternator/battery tester. A user connects the tester to an alternator that is driven by an automobile engine. When the engine speeds reaches a predetermined level, the user push a start button on the tester to apply a load to the alternator. Salley also describes terminating the load test after a predetermined period of time (Abstract; col. 10, lns. 19-58; col. 33, lns.4-63).

In rejecting the claim 1, the Office Action admitted that Salley's tester does not teach "detecting characteristics of an alternator output signal...after the load has been coupled to the alternator for a first predetermined period of time," as required by the claim. Nonetheless, the

Office Action went on rejecting the claim by contending that testing after waiting for a signal to be stabilized is well-known and that people skilled in the art would have modified Salley as such to achieve accurate evaluation. The Office Action, however, did not provide any evidence to show detecting characteristics of an alternator output signal after the load has been coupled to the alternator for a first predetermined period of time is well known.

Applicants believe "detecting characteristics of an alternator output signal...after the load has been coupled to the alternator for a first predetermined period of time (emphasis added)," as required by the claims, is novel and non-obvious. It is respectfully submitted that the Examiner has not discharged her duty to establish a prima facie case of obviousness. If the Examiner believes that the feature is well known and proper motivation exists to combine the feature with Salley, it is respectfully requested that evidence supporting the Examiner's contention be produced, or otherwise should allow the claims to issue. Claims 2, 3, 5, 14 and 15, directly or indirectly, depend on claims 1, 4, 13 and 16, respectively, and include every limitation thereof. Therefore, the claims should also be allowed to issue if proper evidence supporting the Examiner's contention cannot be found.

Claim 6 was also rejected as being unpatentable over Salley. Claim 6, as amended, recites:

A system for evaluating the operation of an alternator driven by a motor, comprising:...

- a terminal for receiving an alternator output signal...;
- a sensor for generating a speed signal representative of an engine speed or an alternator speed;
- a switch device for selectively coupling the load to the alternator;
- a controller, coupled to the sensor, the terminal and the switch device, for determining characteristics of the alternator output signal and for controlling operation of the switch device;
- wherein, in response to the speed signal indicating the engine speed or the alternator speed reaching a predetermined level, the

controller automatically generates a first switch operation signal to control the switch device to couple the load to the alternator, and the controller determines characteristics of the alternator output signal based on parameters collected after the load has been coupled to the alternator for a first predetermined period of time.

Claim 6, as amended, clarifies that the controller is "coupled to the sensor, the terminal and the switch device." The amended claim also specifies that the controller "automatically generates a first switch operation signal to control the switch device to couple the load to the alternator" (emphasis added) in response to the speed signal indicating the engine speed or the alternator speed reaching a predetermined level. Adequate support for the amendment can be found in, for example, page 5, line 28 through page 6, line 3 of the specification.

In rejecting the claim, the Examiner admitted that Salley does not have a sensor and a controller as described in the claim. However, the Examiner contended that an operator of Salley's system may observe the alternator speed, and that the operator and the tester, combined, perform the same controller function as described in the claim.

Unlike the claimed features, the operator in Salley is not "coupled to the sensor, the terminal and the switch device," as required by claim 6. Furthermore, the operator and the tester in Salley, even combined, does not automatically generate a first switch operation signal to control the switch device to couple the load to the alternator in response to the speed signal indicating the engine speed or the alternator speed reaching a predetermined level, as required by claim 6. Therefore, Salley cannot support a prima facie case of obviousness. The obviousness rejection is thus untenable and should be withdrawn. Claims 7-12, directly or indirectly, depend on claim 6 and incorporate every limitation thereof. Therefore, Salley also fails to disclose every feature of claims 7-12 based on the same reasons discussed with respect to claim 6 as well as on their own merits. The obviousness rejection is thus untenable and should be withdrawn. Favorable consideration of the claims is respectfully requested.

Claims 23-25 were rejected as being unpatentable over Salley in view of Bertness. Claims 23-25, directly or indirectly, depend on claim 13 and incorporate every limitation thereof. As discussed with respect to claim 13, Salley fails to teach that "the controller determines the characteristics of the alternator output signal based on parameters collected only after the load has been coupled to the alternator for a first predetermined period of time," as required by claim 13. Bertness does not alleviate this deficiency. Therefore, the references, even combined, do not teach every limitation of the claims. The claims are thus patentable over the references. Favorable consideration of the claims is respectfully requested.

NEW CLAIMS 26-29 ARE PATENTABLE

By this response, claims 26-30 are newly added. Claim 26 describes a method to perform "**machine-implemented steps** of: detecting a motor speed or an alternator speed; coupling a load to the alternator upon the motor speed or the alternator speed reaching a predetermined level; and detecting characteristics of an alternator output signal representative of an alternator characteristic after the load has been coupled to the alternator for a first predetermined period of time." (emphasis added) Adequate support for the claim can be found in, for example, page 5, line 28 through page 6, line 3 of the specification.

In contrast, the operator in Salley needs to determine the engine speed and push a control button to initiate a testing process. Therefore, Salley's system is not fully automatic and does not teach the machine-implemented steps as described in claim 26. The other reference of record, Bertness, also fails to teach these features. Thus, claim 26 is patentable over the references of record.

Claim 27 is a means-plus-function claim and recites "A system for evaluating the operation of an alternator driven by a motor; comprising: a load; terminal means for receiving an

alternator output signal...; sensor means for generating a speed signal representative of a motor speed or an alternator speed; switch means for selectively coupling the load to the alternator; and control means, coupled to the sensor means, the terminal means and the switch means, for determining characteristics of the alternator output signal and for controlling operation of the switch means; wherein, in response to the speed signal indicating the motor speed or the alternator speed reaching a predetermined level, the control means automatically generates a first switch operation signal to control the switch means to couple the load to the alternator, and the control means determines characteristics of the alternator output signal based on parameters collected after the load has been coupled to the alternator for a first predetermined period of time." Adequate support for the claim can be found in, for example, page 5, line 28 through page 6, line 3 of the specification.

Therefore, the control means is coupled to the sensor means, the terminal means and the switch means. In addition, the control means automatically generates a first switch signal to control the switch means to couple the load to the alternator in response to the speed signal indicating the motor speed or the alternator speed reaching a predetermined level." As described in the discussion related to claim 6, Salley fails to disclose these features. The other reference of record, Bertness, does not alleviate these deficiencies. Claim 28 depends on claim 27 and incorporates every limitation thereof. Therefore, the references of record also fail to teach every limitation of claim 28 based on the same reasons for claim 27 as well as on its own merits. The claims are patentable over the cited references. Favorable consideration of the claims is respectfully requested.

Claim 29 depends on claim 13, and further describes a housing of the system that includes "a first compartment for receiving a circuit board including the controller mounted

thereon; a second compartment for housing the load; an air inlet disposed on one side of the second compartment; a fan forming an air outlet on the other side of the second compartment; and wherein the load, the air inlet and the fan are substantially in line, the air inlet and the fan form an air flow path, when the fan is in operation, the heat generated by the load is dissipated to the surrounding air and drawn out through the air outlet, and the housing has a size suitable to be held in one's hand." Adequate support for the amendment can be found in, for example, Fig. 4, and page 8, line 18 through line 29.

None of the references of record teaches the features as describe in claim 29. Thus, claim 29 is patentable over the cited references. Favorable consideration of the claim is respectfully requested.

CONCLUSION

Therefore, the present application claims subject matter patentable over the references of record and is in condition for allowance. Favorable consideration is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Recognition under 37 CFR 10.9(b)

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